

Live imaging of tracheal invasion into pupal IFMs

SL Stefan Luschnig JS Julia Sauerwald

Updated date: Feb 19, 2020

 An abbreviated version of this protocol was published in eLIFE in Oct 2019

Matrix metalloproteinase 1 modulates invasive behavior of tracheal branches during entry into *Drosophila* flight muscles

DOI: 10.7554/eLife.48857

Detailed protocol

Histology of tracheal branches in adult IFMs

- 1) Anesthetize flies and remove the head, abdomen, wings and legs from the thorax using sharp scissors or forceps.
- 2) Collect the thoraxes in a well with PBT (PBS + 0.3% Triton X-100) on ice.
- 3) Remove PBT.
- 4) Fix with 500 µL 4% PFA in PBT for 20 min.
- 5) Remove fixation solution.
- 6) Rinse the thoraxes once with PBT.
- 7) To bisect the thorax, place it on double-sided sticky tape and cut transverse using a sharp microtome blade. Ideally the thorax is cut in one movement and the blade is not moved back and forth after the cuticle has been cut.
- 8) Transfer thorax halves to blocking solution (5% BSA in PBT) and incubate at RT for 1 hour or overnight at 4 °C.
- 9) Dilute Phalloidin-TRITC 1:300 in PBT and incubate for 1 hour at RT.
- 10) Wash 3x 10 min with PBT. Prepare in the meantime glass slides with spacers.
- 11) Mount in Mowiol (Sigma).
- 12) Seal with nail polish.

References:

- Lemke SB & Schnorrer F (2018) In Vivo Imaging of Muscle-tendon Morphogenesis in *Drosophila* Pupae. J Vis Exp URL: <https://www.jove.com/video/57312>
DOI: doi:10.3791/57312
- Sauerwald J, Backer W, Matzat T, Schnorrer F & Luschnig S (2019) Matrix metalloproteinase 1 modulates invasive behavior of tracheal branches during entry into *Drosophila* flight muscles. eLife 8:
- Weitkunat M & Schnorrer F (2014) A guide to study *Drosophila* muscle biology. *Methods* 68: 2–14

How to cite: (Readers should cite both the Bio-protocol preprint and the original research article where this protocol was used)

1. Luschnig, S. and Sauerwald, J. (2020). Live imaging of tracheal invasion into pupal IFMs. Bio-protocol Preprint. bio-protocol.org/prep214.
2. Sauerwald, J., Backer, W., Matzat, T., Schnorrer, F. and Luschnig, S. (2019). Matrix metalloproteinase 1 modulates invasive behavior of tracheal branches during entry into *Drosophila* flight muscles. eLIFE. DOI: [10.7554/eLife.48857](https://doi.org/10.7554/eLife.48857)

Copyright: Content may be subjected to copyright.